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Joseph S Tripoli
Thomson Multimedia Licensing
Patent Department
PO Box 5312
Princeton, NJ 08540

EXAMINER	
TRAN, TRANG U	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/031,156	JOHNSON ET AL.	
	Examiner	Art Unit	
	Trang U. Tran	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/10/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653) and further in view of Ishikawa et al (US Patent No. 5,48,815).

In considering claim 1, Lee discloses all the claimed subject matter, note 1) the claimed a method for processing a plurality of channels (Figs. 1 and 5), the method comprising the steps of: selecting a channel from the plurality of channels is met by the tuner 110 (Fig. 1, col. 2, lines 50-65), 2) the claimed receiving a signal associated with the selected channel is met by the step S201, that is, first, the second signal processor 130 is operated to process a received signal, according to channel selection (Figs. 1 and 5, col. 5, line 39 to col. 6, line 34), and 3) the claimed repeating said selecting, receiving, digital channel determining, analog channel determining and storing steps until each of the plurality of channels have been selected is met by the step 5205, if the first detection signal is also logic "low" the procedure returns to step S201, and then the

steps following step S201 are repeated (Fig. 5, col. 6, lines 3-34). However, Lee explicitly does not disclose the newly added limitation marking the selected channel as a digital signal if the intermediate frequency of the selected channel is similar to a nominal frequency for a digital signal; marking the selected channel as an analog signal if the intermediate frequency of the selected channel is similar to a nominal frequency for an analog signal, and the claimed storing information indicative of whether the selected channel is marked as a digital or analog channel.

Citta teaches that in a RAM memory 28, coupled to microprocessor 26 over a bi directional communication link 30, stores information concerning the type of signal, if any, received on each different television channel (Figs. 1 and 4, col. 2, lines 50-61 and col. 3, line 49 to col. 4, line 10).

Therefore, it would have been obvious to one ordinary skill in the ad at the time of the invention to incorporate the RAM memory as taught by Citta into Lee's system in order to automatically selects the appropriate television signal when tuned to a "television channel" (col. 1, lines 38-40 of Citta).

The proposed combination of Lee and Citta as proposed by the examiner above does not specifically discloses the newly added limitation marking the selected channel as a digital signal if the intermediate frequency of the selected channel is similar to a nominal frequency for a digital signal and marking the selected channel as an analog signal if the intermediate frequency of the selected channel is similar to a nominal frequency for an analog signal.

Ishikawa et al teaches a receiver having means for adding to the modulated signal for identifying whether the input signal includes the analog modulated signal or the digital modulated signal (col. 13, lines 50-55) so that the receive can recognize the type of the inputted modulated signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the identification flag as taught by Ishikawa et al into the combination of Lee and Citta above in order to properly process the inputted signal by identify the type of the inputted signal.

In considering claim 2, the claimed wherein the information associated with the selected channel is stored into a memory unit is met by a RAM memory 28, coupled to microprocessor 26 over a bi-directional communication link 30, stores information concerning the type of signal, if any, received on each different television channel (Figs. 1 and 4, col. 2, lines 50-61 and col. 3, line 49 to col. 4, line 10 of Citta).

In considering claim 3, Lee discloses all the claimed subject matter, note 1) the claimed wherein said digital channel determining step further comprises the steps of: determining that the received signal is a digital baseband signal is met by the IF amp demodulation A/D block 131 which controls the amplitude of an IF signal output from the tuner 110 shown in Fig. 1, demodulates the IF signal to a base-band signal using a pilot signal included in the IF signal, and coverts the demodulated signal into digital data of the second processor 130 (Figs. 2-3 and 5, col. 3, line 43 to col. 4, line 34 and col. 5, lines 39-49), 2) the claimed receiving synchronization and error check signals from the received signal is met by the step 5202 in which the second detector 150 detects a

synchronous (segment or field synchronous) signal and error rate from the HDTV signal processed in the second signal processor 130 and outputs a second detection signal of logic "high" when the synchronous signal is detected and the error rate is less than or equal to the threshold value, as show in Fig. 3 (Figs. 1-3 and 5, col. 4, lines 24-67 and col. 5, line 39 to col. 6, line 34), 3) the claimed determining whether the generated synchronization and error check signals are proper for a digital television signal is met by the determination signal generator 160 which outputs to the selector 170 a determination signal for selecting the output of the second signal processor 130, when the second detection signal is logic "high" in step 5203 (Figs. 1-3 and 5, col. 4, lines 24-67 and col. 5, line 39 to col. 6, line 34), and 4) the claimed marking the selected channel as digital if the synchronization and error check signals are proper is met by the selected HD TV signal which outputs from step 5203 (Fig. 5, col. 5, line 39 to col. 6, line 34 of Lee), OR the RAM memory which is appropriately marked with an HD bit of 1, and FC bit of 1 for the HDTV signal (Fig. 4, col. 3, line 49 to col. 4, line 10 of Citta).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653) and Ishikawa et al (US Patent No. 5,418,815) as applied to claims 1 and 3 above, and further in view of Han (US Patent No. 6,545,723 B1).

In considering claim 4, Lee discloses all the claimed subject matter, note 1) the claimed wherein the synchronization signals comprise a Segment Lock signal is met by the synchronous signal detector 152 which detects a field or segment synchronous signal included in a signal selected by the second selector 153 (Figs. 2-3, col. 4, lines

19-67). However, the combination of Lee, Citta, and Ishikawa et al explicitly do not disclose the claimed the synchronization signals comprise a Carrier Lock signal. Han teaches that a timing recovery unit, coupled to receive the intermediate frequency signal output from the tuning unit, for self-recovering symbol timing of the applied HDTV signal, and outputting a symbol timing lock signal and an analog-to-digital converted HDTV signal (Figs. 1-3, col. 2, lines 1-18 and col. 3, line 41 to col. 6, line 45).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the synchronization signals comprise a Carrier Lock signal as taught by Han into the combination of Lee, Citta, and Ishikawa et al's system in order to provide a method of receiving both HDTV signals and NTSC signals using symbol timing recovery and sync signal detection (col. 1, lines 50-53 of Han).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653) and Ishikawa et al (US Patent No. 5,418,815) as applied to claims 1 and 3 above, and further in view of Citta et al (US Patent No. 6,559,898 B1).

In considering claim 5, Lee discloses all the claimed subject matter, note 1) the claimed wherein the error correction signals comprise FEC Lock is met by the FEC decoder 137 (Fig. 3, col. 4, lines 24-67 of Lee). However, the combination of Lee, Citta, and Ishikawa et al explicitly do not disclose the claimed the error correction signals comprise Reed Solomon Error Rate signals. Citta et al teach that for terrestrial broadcasting, the data signal is: randomized', subjected to Reed-Solomon (R/S) type encoding for error correction (Fig. 1 , col. 1 , lines 32-51 and col. 2, lines 56-67).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the Reed-Solomon (R/S) type encoding for error correction as taught by Citta et al into the combination of Lee, Citta, and Ishikawa et al's system in order to provide a low cost digital signal coupling system for a VSB digital television receiver.

6. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653) and Ishikawa et al (US Patent No. 5,418,815) as applied to claim 1 above, and further in view of Shintani et al (US Patent No. 6,137,546).

In considering claim 6, Lee discloses all the claimed subject matter, note 1) the claimed wherein said analog channel determining step further comprises the steps of: determining that the received signal is an analog baseband signal is met by the first signal detector 140 which determines the existence or non-existence of the NTSC TV signal (Figs. 1 and 5, col. 2, line 50 to col. 3, line 22), 2) the claimed determining whether a video synchronization signal is detected is met by the step 5205 in which the first detector 140 detects a synchronous (horizontal or vertical synchronous) signal or a GCR signal from the NTSC TV signal processed by the first signal processor 120, and outputs a first detection signal of logic "high" if the synchronous signal or GCR signal is detected (Figs. 1 and 5, col. 5, line 39 to col. 6, line 34), and 3) the claimed marking the channel as analog if the video carrier is automatically fine tuned and the video synchronization signal is detected is met by the selected NTSC TV signal which outputs from step 5206 (Fig. 5, col. 5, line 39 to col. 6, line 34 of Lee), OR the RAM memory

which is appropriately marked with an HD bit of 0, and FC bit of 1 for the NTSC TV signal (Fig. 4, col. 3, line 49 to col. 4, line 10 of Citta).

However, the combination of Lee, Citta, and Ishikawa et al explicitly do not disclose determining whether a video carrier of the analog baseband signal is automatically fine tuned.

Shintani et al teach that inside tuner 34 an automatic fine tune (AFT) voltage 36 is generated and this analog signal is made available to microprocessor 32 via an analog-to-digital circuit 38, when signal is present, an AFT voltage 36, which is within a define range, is detected by microprocessor (Figs. 2-3, col. 3, lines 28-64).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the tuner which has automatic fine tune (AFT) voltage as taught by Shintani et al into the combination of Lee, Citta, and Ishikawa et al's system in order to accurately detect the validity of receiving the television signal.

In considering claim 7, the claimed wherein said video synchronization is a composite SYNC signal having a vertical synchronization signal and a horizontal synchronization signal is met by the step 5205 in which the first detector 140 detects a synchronous (horizontal or vertical synchronous) signal or a GCR signal from the NTSC TV signal processed by the first signal processor 120, and outputs a first detection signal of logic "high" if the synchronous signal or GCR signal is detected (Figs. 1 and 5, col. 5, line 39 to col. 6, line 34 of Lee).

7. Claims 8-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653) and

Kim (US Patent No. 6,519,298 B1) and further in view of Ishikawa et al (US Patent No. 5,418,815).

In considering claim 8, Lee discloses all the claimed subject matter, note 1) the claimed a tuner for converting a radio frequency (RF) signal associated with each of the plurality of channels into an intermediate frequency (IF) signal is met by the tuner 110 which simultaneously receives an HDTV signal and an NTSC TV signal (Fig. 1, col. 2, lines 50-65), 2) the claimed a digital signal converter, coupled to said tuner, for demodulating the IF signal into a baseband digital signal and generating synchronization and error correction signals from the baseband digital signal is met by the second signal processor 130 which demodulates and processes the HDTV signals and performs the synchronous signal detection and the error correction decoder (Figs. 1-3, col. 2, line 61 to col. 4, line 67), 3) the claimed an analog signal converter, coupled to said tuner, for demodulating the IF signal into a baseband analog signal and generating tuning and synchronization signals from the baseband analog signal is met by the first signal processor 120 which demodulates and processes the NTSC TV signals and generates tuning and synchronization signals from the baseband analog signal (Fig. 1, col. 2, line 61 to col. 3, line 22).

However, Lee explicitly does not disclose: 1) the claimed a video processor, coupled to said digital and analog signal converters, for processing video and audio components of the baseband digital and analog signals to an output device, and 2) the claimed a memory unit for storing autoprogramming software and information associated with each of the plurality of channels, and the newly added limitation a

microprocessor, coupled to said digital signal converter, said analog signal converter, said tuner and said memory unit, for controlling said tuner, receiving signals from said analog and digital signal converters, executing autoprogramming software, marking the type of channel for each of the plurality of channels and storing information about the type of channel for each of the plurality of channels into said memory unit.

1) Kim teaches that a display processor 122 selects either the NTSC TV signal provided from a first ADC 1 10 or the HDTV signal provided from the video decoder 120 according to the discriminating signal HD/NTSC, processes the selected signal as a signal suitable to be displayed, and provides the processed signal to a digital-to-analog converter (DAC)/mixer 124 (Fig. 1, col. 2, lines 57-67). Therefore, it would have been obvious to one ordinary skill in the ad at the time of the invention to incorporate the display processor as taught by Kim into Lee's system in order to process the video signal to the suitable format to be displayed.

2) Citta teaches that a tuner microprocessor 26 is coupled to tuner 10 and supplies logic signals for controlling the development of appropriate synthesized frequencies for receiving and detecting the gamut of HDTV channel signals and NTSC channel signals, in a RAM memory 28, coupled to microprocessor 26 over a bi-directional communication link 30, stores information concerning the type of signal, if any, received on each different television channel and the auto programming mode illustrating by the flow chart of Fig. 4 (Figs. 1 and 4, col. 2, lines 50-61 and col. 3, line 49 to col. 4, line 10).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the microprocessor for executing auto programming software and the RAM memory as taught by Citta into Lee's system in order to automatically selects the appropriate television signal when tuned to a "television channel" and capable of automatically receiving either HDTV or NTSC spectrum compatible television signals (col. 1, lines 38-40 and col. 4, lines 1 1-14 of Citta).

The proposed combination of Lee, Kim and Citta as proposed above does not specifically discloses that the microprocessor, coupled to said digital signal converter, said analog signal converter, said tuner and said memory unit, for controlling said tuner, receiving signals from said analog and digital signal converters, executing auto programming software, marking the type of channel for each of the plurality of channels and storing information about the type of channel for each of the plurality of channels into said memory unit.

Ishikawa et al teaches a receiver having means for adding to the modulated signal for identifying whether the input signal includes the analog modulated signal or the digital modulated signal (col. 13, lines 50-55) so that the receive can recognize the type of the inputted modulated signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the identification flag as taught by Ishikawa et al into the combination of Lee, Kim and Citta above in order to properly process the inputted signal by identify the type of the inputted signal.

In considering claim 9, the claimed wherein said digital signal converter comprises: a digital demodulator for demodulating the IF signal into a digital baseband signal and generating synchronization signals is met by the IF amp demodulation block 131 which demodulates the IF signal to a baseband signal using a pilot signal included in the IF signal and the synchronous signal detection 152 (Figs. 2-3, col. 3, line 43 to col. 4, line 67 of Lee), 2) the claimed a forward error correction (FEC) module, coupled to said digital demodulator, for generating error correction signals is met by the FEC decoder 142 of the channel decoder 116 (Figs. 1-2, col. 3, lines 55-65 of Kim), and 3) the claimed a digital signal processor, coupled to said FEC module, for separating the digital baseband signal into video and audio components is met by the transmission decoder 118 which analyses a transport packet header from the transport packet and divides the transport packet into a video stream and an audio stream (Fig. 1 , col. 2, lines 50-56 of Kim).

In considering claim 11, the claimed wherein said microprocessor determines the type of channel by executing auto programming software stored in said memory unit is met by a RAM memory 28, coupled to microprocessor 26 over a bi-directional communication link 30, stores information concerning the type of signal, if any, received on each different television channel and the auto programming mode illustrating by the flow chart of Fig. 4 (Figs. 1 and 4, col. 2, lines 50-61 and col. 3, line 49 to col. 4, line 10 of Citta).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US

Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653), Kim (US Patent No. 6,519,298 B1), Ishikawa et al (US Patent No. 5,418,815) and further in view of Sugiyama (US Patent No. 6,313,886 B1).

In considering claim 10, Lee discloses all the claimed subject matter, note 1) the claimed wherein the analog signal converter comprises: an analog demodulator for demodulating the IF signal into an analog baseband signal and generating tuning signals is met by the first signal processor 120 which demodulates and processes the NTSC TV signals and generates tuning and synchronization signals from the baseband analog signal (Fig. 1, col. 2, line 61 to col. 3, line 22 of Lee). However, the combination of Lee, Citta, Kim and Ishikawa et al explicitly do not disclose the claimed analog signal processor, coupled to said analog demodulator, for generating video synchronization signals and separating the analog baseband signal into video and audio components. Sugiyama teaches that the analog video processing circuit 413 processes the demodulated analog signals received from the analog demodulator 405 and the analog audio processing circuit 415 processes the demodulated analog signals received from the analog demodulator 405 (Fig. 4, col. 4, lines 12-64). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the analog processing circuit as taught by Sugiyama into the combination of Lee, Citta, Kim and Ishikawa et al's system in order to tune transmission channels that transmit either PSIP transport streams or non-PSIP transport streams.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653), Kim (US Patent

No. 6,519,298 B1), Ishikawa et al (US Patent No. 5,418,815), and further in view of Han (US Patent No. 6,545,723 B1).

In considering claim 12, Lee discloses all the claimed subject matter, note 1) the claimed wherein the synchronization signals comprise a Segment Lock signal is met by the synchronous signal detector 152 which detects a field or segment synchronous signal included in a signal selected by the second selector 153 (Figs. 2-3, col. 4, lines 19-67). However, the combination of Lee, Citta, Kim and Ishikawa et al explicitly do not disclose the claimed the synchronization signals comprise a Carrier Lock signal. Han teaches that a timing recovery unit, coupled to receive the intermediate frequency signal output from the tuning unit, for self-recovering symbol timing of the applied HDTV signal, and outputting a symbol timing lock signal and an analog-to-digital converted HDTV signal (Figs. 1-3, col. 2, lines 1-18 and col. 3, line 41 to col. 6, line 45).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the synchronization signals comprise a Carrier Lock signal as taught by Han into the combination of Lee, Citta, Kim and Ishikawa et al's system in order to provide a method of receiving both HDTV signals and NTSC signals using symbol timing recovery and sync signal detection (col. 1, lines 50-53 of Han).

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653), Kim (US Patent No. 6,519,298 B1), Ishikawa et al (US Patent No. 5,418,815), and further in view of Citta et al. (US Patent No. 6,559,898 B1).

In considering claim 13, Kim discloses all the claimed subject matter, note 1) the claimed wherein the error correction signals comprise FEC Lock is met by the FEC decoder 142 (Fig. 2, col. 3, lines 56-65 of Kim). However, the combination of Lee, Citta, Kim and Ishikawa et al explicitly do not disclose the claimed the error correction signals comprise Reed Solomon Error Rate signals. Citta et al teach that for terrestrial broadcasting, the data signal is: randomized', subjected to Reed-Solomon (R/S) type encoding for error correction (Fig. 1, col. 1, lines 32-51 and col. 2, lines 56-67). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the Reed-Solomon (R/S) type encoding for error correction as taught by Citta et al into the combination of Lee, Citta, Kim and Ishikawa et al's system in order to provide a low cost digital signal coupling system for a VSB digital television receiver.

11. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653), Sugiyama (US Patent No. 6,313,886 B1), and further in view of Ishikawa et al (US Patent No. 5,418,815).

In considering claim 14, Lee discloses all the claimed subject matter, note 1) the claimed selecting a channel from the plurality of channels is met by is met by the tuner 1 10 (Fig. 1, col. 2, lines 50-65), 2) the claimed receiving a signal associated with the selected channel is met by the step S201, that is, first, the second signal processor 130 is operated to process a received signal, according to channel selection (Figs. 1 and 5, col. 5, line 39 to col. 6, line 34), and 3) the claimed repeating said selecting, receiving,

digital channel determining, analog channel determining and storing steps until each of the plurality of channels have been selected is met by the step 5205, if the first detection signal is also logic "low" the procedure returns to step S201, and then the steps following step S201 are repeated (Fig. 5, col. 6, lines 3-34).

However, Lee explicitly does not disclose: 1) the newly added limitation marking the selected channel as a digital signal if the frequency of the selected channel is similar to a nominal frequency for a digital signal; 2) the newly added limitation marking the selected channel as an analog signal if the frequency of the selected channels is similar to a nominal frequency for an analog signal; 1) the claimed storing information Indicative of whether the selected channel is marked as an analog or digital channel, and 2) the claimed a computer readable medium storing a software program that, when executed by a computer.

1) Citta teaches that in a RAM memory 28, coupled to microprocessor 26 over a bi-directional communication link 30, stores information concerning the type of signal, if any, received on each different television channel (Figs. 1 and 4, col. 2, lines 50-61 and col. 3, line 49 to col. 4, line 10).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the RAM memory as taught by Citta into Lee's system in order to automatically selects the appropriate television signal when tuned to a "television channel" (col. 1, lines 38-40 of Citta).

2) Sugiyama teaches that as show in Fig. 5, the control circuit 410 includes a processor 502 and a memory 504, the memory 504 stores an application program, and

the processor 502 executes the application program to perform the channel tuning process in accordance with the present invention (Fig. 5, col. 4, line 65 to col. 5, line 3).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the control circuit as taught by Sugiyama into Lee's system in order to simplify the operation of Lee's system by using software as taught by Sugiyama.

The proposed combination of Lee, Citta, and Sugiyama does not specifically discloses the newly added limitation marking the selected channel as a digital signal if the frequency of the selected channel is similar to a nominal frequency for a digital signal and the newly added limitation marking the selected channel as an analog signal if the frequency of the selected channels is similar to a nominal frequency for an analog signal.

Ishikawa et al teaches a receiver having means for adding to the modulated signal for identifying whether the input signal includes the analog modulated signal or the digital modulated signal (col. 13, lines 50-55) so that the receive can recognize the type of the inputted modulated signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the identification flag as taught by Ishikawa et al into the combination of Lee, Citta, and Sugiyama above in order to properly process the inputted signal by identify the type of the inputted signal.

In considering claim 15, Lee discloses all the claimed subject matter, note 1) the claimed wherein said digital channel determining step further comprises the steps of:

determining that the received signal is a digital baseband signal is met by the IF amp demodulation A/D block 131 which controls the amplitude of an IF signal output from the tuner 110 shown in Fig. 1, demodulates the IF signal to a base-band signal using a pilot signal included in the IF signal, and coverts the demodulated signal into digital data of the second processor 130 (Figs. 2-3 and 5, col. 3, line 43 to col. 4, line 34 and col. 5, lines 39-49), 2) the claimed receiving synchronization and error check signals from the received signal is met by the step 5202 in which the second detector 150 detects a synchronous (segment or field synchronous) signal and error rate from the HDTV signal processed in the second signal processor 130 and outputs a second detection signal of logic "high" when the synchronous signal is detected and the error rate is less than or equal to the threshold value, as show in Fig. 3 (Figs. 1-3 and 5, col. 4, lines 24-67 and col. 5, line 39 to col. 6, line 34), 3) the claimed determining whether the generated synchronization and error check signals are proper for a digital television signal is met by the determination signal generator 160 which outputs to the selector 170 a determination signal for selecting the output of the second signal processor 130, when the second detection signal is logic "high" in step 5203 (Figs. 1-3 and 5, col. 4, lines 24-67 and col. 5, line 39 to col. 6, line 34), and 4) the claimed marking the selected channel as digital if the synchronization and error check signals are proper is met by the selected HD TV signal which outputs from step 5203 (Fig. 5, col. 5, line 39 to col. 6, line 34 of Lee), OR the RAM memory which is appropriately marked with an HD bit of 1 , and FC bit of 1 for the HDTV signal (Fig. 4, col. 3, line 49 to col. 4, line 10 of Citta).

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US

Patent No. 6,335,762 B1) in view of Citta (US Patent No. 5,283,653), Sugiyama (US Patent No. 6,313,886 B1), Ishikawa et al (US Patent No. 5,418,815), and further in view of Shintani et al. (US Patent No. 6,137,546).

In considering claim 16, Lee discloses all the claimed subject matter, note 1) the claimed wherein said analog channel determining step further comprises the steps of: determining that the received signal is an analog baseband signal is met by the first signal detector 140 which determines the existence or non-existence of the NTSC TV signal (Figs. 1 and 5, col. 2, line 50 to col. 3, line 22), 2) the claimed determining whether a video synchronization signal is detected is met by the step 5205 in which the first detector 140 detects a synchronous (horizontal or vertical synchronous) signal or a GCR signal from the NTSC TV signal processed by the first signal processor 120, and outputs a first detection signal of logic "high" if the synchronous signal or GCR signal is detected (Figs. 1 and 5, col. 5, line 39 to col. 6, line 34), and 3) the claimed marking the channel as analog if the video carrier is automatically fine tuned and the video synchronization signal is detected is met by the selected NTSC TV signal which outputs from step 5206 (Fig. 5, col. 5, line 39 to col. 6, line 34 of Lee), OR the RAM memory which is appropriately marked with an HD bit of 0, and FC bit of 1 for the NTSC TV signal (Fig. 4, col. 3, line 49 to col. 4, line 10 of Citta).

However, the combination of Lee, Citta, Sugiyama and Ishikawa et al explicitly do not disclose determining whether a video carrier of the analog baseband signal is automatically fine tuned.

Shintani et al teach that inside tuner 34 an automatic fine tune (AFT) voltage 36 is generated and this analog signal is made available to microprocessor 32 via an analog-to-digital circuit 38, when signal is present, an AFT voltage 36, which is within a define range, is detected by microprocessor (Figs. 2-3, col. 3, lines 28-64).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the tuner which has automatic fine tune (AFT) voltage as taught by Shintani et al into the combination of Lee, Citta, Sugiyama and Ishikawa et al's system in order to accurately detect the validity of receiving the television signal.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TT
June 8, 2005

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600